

## Implementation of Supplemental Instructional (SI) Program in the College of Engineering at Cal Poly Pomona

Zahra Sotoudeh,  
Assistant Professor, Department of Aerospace Engineering, Cal Poly Pomona  
Lily Gossage,  
Director of Maximizing Engineering Potential, Cal Poly Pomona

Katherine Nava, and Arturo Rodriguez Salazar  
Undergraduate Students and Supplemental Instructional Facilitator, Cal Poly Pomona

Supplemental Instructional (SI) is a peer-academic-assistant model introduced by the University of Missouri-Kansas in 1973. This model is based on behavioral learning theory. At Cal Poly Pomona, we targeted high drop-fail-withdraw (DFW) rate courses in the college of engineering for SI program. We started this program in the academic year of 2016-2017. SI sessions are informal, active-learning sessions facilitated by a student (SI facilitator). The SI facilitator is a student who previously passed the course with A grade. The faculty coordinator for each course advises the SI facilitator. We encourage our SI facilitators to use active learning methods in their classrooms. This is an extension of “learn-by-doing” philosophy of Cal Poly Pomona from our laboratories to our classes.

Attending SI program is optional, however, the faculty coordinator encourages students to attend SI sessions. The faculty coordinator does not attend the SI sessions. One of the benefits of the SI program is that it is a peer-assistant program. Students are comfortable to talk, brainstorm, and work on their problem-solving skills, and get assistant for each other and the SI facilitator.

We have introduced using technology in our implementation of the SI program. Each SI facilitator has been assigned an iPad. They use the iPad to solve problems in class and record the lectures. Besides, SI facilitator produce three videos for each course. We are hoping to create an archive of videos for future use and for students to review.

For the past two years, we offered SI program for over ten courses and followed the grade of students who did attend the SI program and those who did not. We will study the trends in each course and analysis the effectiveness of the SI program. Also, we examine the improvement in the DFW rate of the classes we offered the SI program to understand the effectiveness of SI on each course DFW rate.